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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/945,334

Applicant(s)

BRUN ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-9 and 14-25 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what is meant by "the tolerance of said matching alignment grooves". Is it the tolerance of the spacing between the grooves or is it the tolerance for the width of the grooves or is it the tolerance for the depth of the grooves?

3. Claims 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by "the tolerance for the walls of the at least one capillary". Is it meant the tolerance for the capillary wall thickness or the tolerance for the distance between the capillary wall or the outer diameter of the capillary walls?

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,950,058 to Kakii et al.

Referring to claims 1, Kakii et al. discloses all the limitations of the claimed invention. Kakii et al. discloses a method of positioning optical fibers in a ferrule including the steps: providing a ferrule (105) comprising at least one capillary (106) extending axially through the ferrule; inserting at least two optical fibers through the ferrule; providing a fiber alignment device (1), where the alignment device comprises two wafers; applying the alignment device to the fibers extending from the ferrule; applying adhesive to the fibers; and curing the adhesive. See Fig 4A-E.

6. Claims 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,134,360 to Cheng et al.

Referring to claim 7, Cheng et al. discloses all the limitations of the claimed invention. Cheng et al. discloses a method of making an optical assembly including the steps: providing a ferrule (1) comprising a capillary (4) extending axially through the ferrule; providing a plurality of optical fibers (2); applying adhesive to the fibers; and inserting the plurality of fibers through the capillary and curing the adhesive. See col. 3, lines 36-38.

Referring to claim 8, Cheng et al. discloses all the limitations of the claimed invention. Cheng et al. discloses that the adhesive may be applied to the fibers before inserting them into the ferrule, therefore it is clear that the adhesive is drawn into the ferrule when the fibers are inserted into the ferrule. See col. 3, lines 36-38.

Referring to claim 9, Cheng et al. discloses all the limitations of the claimed invention. Cheng et al. discloses a method of making an optical assembly including the steps: providing a ferrule (1) comprising a capillary (4) extending axially through the ferrule; providing a plurality of optical fibers (2); applying adhesive to the fibers; and inserting the plurality of fibers through the capillary and curing the adhesive. It is clear that the adhesive is drawn into the ferrule when the fibers are inserted into the ferrule. See col. 3, lines 36-38.

7. Claims 14 and 18 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,322,256 to Inada et al.

Referring to claim 14, Inada et al. discloses all the limitations of the claimed method. Inada et al. discloses a method of assembling a fiber ferrule assembly including the steps: providing a ferrule (1) comprising at least one capillary (2) extending axially through the ferrule; providing a plurality of optical fibers (5,6) and inserting the plurality of fibers through the at least one capillary. It is inherent within the invention that the fibers meet certain tolerances for core concentricity, ovality, and diameter.

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Referring to claim 18, Inada et al. discloses all the limitations of the claimed method. Inada et al. discloses a method of assembling a fiber ferrule assembly including the steps: providing a ferrule (1) comprising at least one capillary (2) extending axially through the ferrule; providing a plurality of optical fibers (5,6) and inserting the plurality of fibers through the at least one capillary, applying adhesive to the fibers and curing the adhesive

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 15-17, 19, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,322,256 to Inada et al.

Referring to claim 15, Inada et al. discloses all the limitations of the claimed method, except Inada et al. does not appear to disclose that the tolerance for core concentricity is  $1.0\ \mu\text{m}$ , the tolerance for ovality is 0.8 percent, and the tolerance for diameter is  $1.0\ \mu\text{m}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize precise tolerances for the optical fibers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Referring to claim 16, Inada et al. discloses all the limitations of the claimed method, except Inada et al. does not appear to disclose that the tolerance for core concentricity is  $0.5\ \mu\text{m}$ , the tolerance for ovality is 0.4 percent, and the tolerance for diameter is  $0.5\ \mu\text{m}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize precise tolerances for the optical fibers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Referring to claim 17, Inada et al. discloses all the limitations of the claimed method, except Inada et al. does not appear to disclose that the tolerance for core concentricity is  $0.1\ \mu\text{m}$ , the tolerance for ovality is 0.12 percent, and the tolerance for diameter is  $0.1\ \mu\text{m}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize precise tolerances for the optical fibers, since it has been held that where the general conditions of a claim are disclosed in the prior

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art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Referring to claim 19, Inada et al. discloses all the limitations of the claimed method, except Inada et al. does not appear to disclose that the tolerance for the gap between the fibers and the wall of the capillary being less than  $1.5\ \mu\text{m}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize precise tolerances for gap between the optical fibers and the wall, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Referring to claims 23-25, Inada et al. discloses all the limitations of the claimed method, except Inada et al. does not appear to disclose that the tolerance for the wall of the at least one capillary are  $2.0\ \mu\text{m}$ ,  $1.0\ \mu\text{m}$ , or  $0.5\ \mu\text{m}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize precise tolerances for the capillary wall, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

11. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,433,924 to Sommer in view of U.S. Patent No. 6,393,191 to Chen et al.

Referring to claims 20-22, Sommer discloses a method of assembling a fiber ferrule for an optical assembly including: providing a fiber ferrule (12) comprising at least one capillary (44) extending axially through the ferrule, and wherein the at least one capillary is square; providing a plurality of optical fibers (20,22,24,26); inserting the fibers through the at least one capillary; where the adjacent fibers are preferably touching. Sommer does not specifically appear to disclose the step of applying an adhesive to the fibers and the step of curing the adhesive. Chen et al. discloses a similar method that utilizes a step of applying an adhesive to the optical fibers and a step of curing adhesive for the purpose of securing the optical fibers within the ferrule. Since Sommer and Chen et al. are both from the same field of endeavor, the purpose of Chen et al. would have been recognize in the pertinent art of Sommer. It would have been obvious to one having ordinary skill at the time the invention was made to include the steps of applying an adhesive and curing the adhesive to the method disclosed by Sommer, for the purpose of securing the optical fibers within the ferrule.

***Allowable Subject Matter***

12. Claims 2, 3, and 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 4-6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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14. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 2-6, the prior art does appear to disclose the method as claimed, including both the wafers containing grooves.

Referring to claim 10, the prior art does not appear to disclose the step of applying heat to the adhesive to improve the flow of the adhesive.

Referring to claim 11, the prior art does not appear to disclose the step of applying a small amount of a second adhesive to the fivers outside of the ferrule and curing the second adhesive to block the flow of the first liquid adhesive.

Referring to claim 12, the prior art does not appear to disclose that the viscosity of the adhesive is about 3000cPs.

Referring to claim 13, the prior art does not appear to disclose that the viscosity of the adhesive is about between 2000 cPs and about 5000 cPs.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

Kevin S. Wood  
March 18, 2003

  
Brian Healy  
Primary Examiner